RAW SEQUENCE LISTING

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Application Serial Number: ___09/747,521A___

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            RAW SEQUENCE LISTING              DATE: 11/09/2006
            PATENT APPLICATION:  US/09/747,521A    TIME: 10:22:49

            Input Set : N:\efs\09747521a_efs\sequen1.txt
            Output Set: N:\CRF4\11092006\I747521A.raw
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 3  <110> APPLICANT: GALLOWAY, DARREL R.
 4        MATECZUN, ALFRED J.
 6  <120> TITLE OF INVENTION: METHODS FOR PROTECTION AGAINST LETHAL INFECTION WITH
 7        BACILLUS ANTHRACIS
 9  <130> FILE REFERENCE: 22727-04079
11  <140> CURRENT APPLICATION NUMBER: 09/747,521A
12  <141> CURRENT FILING DATE: 2000-12-21
14  <150> PRIOR APPLICATION NUMBER: 60/171,459
15  <151> PRIOR FILING DATE: 1999-12-22
17  <160> NUMBER OF SEQ ID NOS: 10
19  <170> SOFTWARE: PatentIn Ver. 3.3
21  <210> SEQ ID NO: 1
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23  <212> TYPE: DNA
24  <213> ORGANISM: Bacillus anthracis
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28  <222> LOCATION: (1)..(2427)
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33   1               5                   10                  15
35  gta aca gca att act ttg agt ggt ccc gtc ttt atc ccc ctt gta cag     96
36  Val Thr Ala Ile Thr Leu Ser Gly Pro Val Phe Ile Pro Leu Val Gln
37              20                  25                  30
39  ggg gcg ggc ggt cat ggt gat gta ggt atg cac gta aaa gag aaa gag    144
40  Gly Ala Gly Gly His Gly Asp Val Gly Met His Val Lys Glu Lys Glu
41              35                  40                  45
43  aaa aat aaa gat gag aat aag aga aaa gat gaa gaa cga aat aaa aca    192
44  Lys Asn Lys Asp Glu Asn Lys Arg Lys Asp Glu Glu Arg Asn Lys Thr
45         50                  55                  60
47  cag gaa gag cat tta aag gaa atc atg aaa cac att gta aaa ata gaa    240
48  Gln Glu Glu His Leu Lys Glu Ile Met Lys His Ile Val Lys Ile Glu
49  65                  70                  75                  80
51  gta aaa ggg gag gaa gct gtt aaa aaa gag gca gca gaa aag cta ctt    288
52  Val Lys Gly Glu Glu Ala Val Lys Lys Glu Ala Ala Glu Lys Leu Leu
53                  85                  90                  95
55  gag aaa gta cca tct gat gtt tta gag atg tat aaa gca att gga gga    336
56  Glu Lys Val Pro Ser Asp Val Leu Glu Met Tyr Lys Ala Ile Gly Gly
57              100                 105                 110
59  aag ata tat att gtg gat ggt gat att aca aaa cat ata tct tta gaa    384
60  Lys Ile Tyr Ile Val Asp Gly Asp Ile Thr Lys His Ile Ser Leu Glu
61              115                 120                 125
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63 gca tta tct gaa gat aag aaa aaa ata aaa gac att tat ggg aaa gat   432
64 Ala Leu Ser Glu Asp Lys Lys Lys Ile Lys Asp Ile Tyr Gly Lys Asp
65     130                 135                 140
67 gct tta tta cat gaa cat tat gta tat gca aaa gaa gga tat gaa ccc   480
68 Ala Leu Leu His Glu His Tyr Val Tyr Ala Lys Glu Gly Tyr Glu Pro
69 145             150                 155                 160
71 gta ctt gta atc caa tct tcg gaa gat tat gta gaa aat act gaa aag   528
72 Val Leu Val Ile Gln Ser Ser Glu Asp Tyr Val Glu Asn Thr Glu Lys
73                 165                 170                 175
75 gca ctg aac gtt tat tat gaa ata ggt aag ata tta tca agg gat att   576
76 Ala Leu Asn Val Tyr Tyr Glu Ile Gly Lys Ile Leu Ser Arg Asp Ile
77             180                 185                 190
79 tta agt aaa att aat caa cca tat cag aaa ttt tta gat gta tta aat   624
80 Leu Ser Lys Ile Asn Gln Pro Tyr Gln Lys Phe Leu Asp Val Leu Asn
81         195                 200                 205
83 acc att aaa aat gca tct gat tca gat gga caa gat ctt tta ttt act   672
84 Thr Ile Lys Asn Ala Ser Asp Ser Asp Gly Gln Asp Leu Leu Phe Thr
85     210                 215                 220
87 aat cag ctt aag gaa cat ccc aca gac ttt tct gta gaa ttc ttg gaa   720
88 Asn Gln Leu Lys Glu His Pro Thr Asp Phe Ser Val Glu Phe Leu Glu
89 225             230                 235                 240
91 caa aat agc aat gag gta caa gaa gta ttt gcg aaa gct ttt gca tat   768
92 Gln Asn Ser Asn Glu Val Gln Glu Val Phe Ala Lys Ala Phe Ala Tyr
93             245                 250                 255
95 tat atc gag cca cag cat cgt gat gtt tta cag ctt tat gca ccg gaa   816
96 Tyr Ile Glu Pro Gln His Arg Asp Val Leu Gln Leu Tyr Ala Pro Glu
97             260                 265                 270
99 gct ttt aat tac atg gat aaa ttt aac gaa caa gaa ata aat cta tcc   864
100 Ala Phe Asn Tyr Met Asp Lys Phe Asn Glu Gln Glu Ile Asn Leu Ser
101             275                 280                 285
103 ttg gaa gaa ctt aaa gat caa cgg atg ctg tca aga tat gaa aaa tgg   912
104 Leu Glu Glu Leu Lys Asp Gln Arg Met Leu Ser Arg Tyr Glu Lys Trp
105     290                 295                 300
107 gaa aag ata aaa cag cac tat caa cac tgg agc gat tct tta tct gaa   960
108 Glu Lys Ile Lys Gln His Tyr Gln His Trp Ser Asp Ser Leu Ser Glu
109 305                 310                 315                 320
111 gaa gga aga gga ctt tta aaa aag ctg cag att cct att gag cca aag  1008
112 Glu Gly Arg Gly Leu Leu Lys Lys Leu Gln Ile Pro Ile Glu Pro Lys
113                 325                 330                 335
115 aaa gat gac ata att cat tct tta tct caa gaa gaa aaa gag ctt cta  1056
116 Lys Asp Asp Ile Ile His Ser Leu Ser Gln Glu Glu Lys Glu Leu Leu
117             340                 345                 350
119 aaa aga ata caa att gat agt agt gat ttt tta tct act gag gaa aaa  1104
120 Lys Arg Ile Gln Ile Asp Ser Ser Asp Phe Leu Ser Thr Glu Glu Lys
121             355                 360                 365
123 gag ttt tta aaa aag cta caa att gat att cgt gat tct tta tct gaa  1152
124 Glu Phe Leu Lys Lys Leu Gln Ile Asp Ile Arg Asp Ser Leu Ser Glu
125     370                 375                 380
127 gaa gaa aaa gag ctt tta aat aga ata cag gtg gat agt agt aat cct  1200
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128 Glu Glu Lys Glu Leu Leu Asn Arg Ile Gln Val Asp Ser Ser Asn Pro
129 385               390               395               400
131 tta tct gaa aaa gaa aaa gag ttt tta aaa aag ctg aaa ctt gat att   1248
132 Leu Ser Glu Lys Glu Lys Glu Phe Leu Lys Lys Leu Lys Leu Asp Ile
133             405               410               415
135 caa cca tat gat att aat caa agg ttg caa gat aca gga ggg tta att   1296
136 Gln Pro Tyr Asp Ile Asn Gln Arg Leu Gln Asp Thr Gly Gly Leu Ile
137             420               425               430
139 gat agt ccg tca att aat ctt gat gta aga aag cag tat aaa agg gat   1344
140 Asp Ser Pro Ser Ile Asn Leu Asp Val Arg Lys Gln Tyr Lys Arg Asp
141             435               440               445
143 att caa aat att gat gct tta tta cat caa tcc att gga agt acc ttg   1392
144 Ile Gln Asn Ile Asp Ala Leu Leu His Gln Ser Ile Gly Ser Thr Leu
145         450               455               460
147 tac aat aaa att tat ttg tat gaa aat atg aat atc aat aac ctt aca   1440
148 Tyr Asn Lys Ile Tyr Leu Tyr Glu Asn Met Asn Ile Asn Asn Leu Thr
149 465               470               475               480
151 gca acc cta ggt gcg gat tta gtt gat tcc act gat aat act aaa att   1488
152 Ala Thr Leu Gly Ala Asp Leu Val Asp Ser Thr Asp Asn Thr Lys Ile
153             485               490               495
155 aat aga ggt att ttc aat gaa ttc aaa aaa aat ttc aaa tat agt att   1536
156 Asn Arg Gly Ile Phe Asn Glu Phe Lys Lys Asn Phe Lys Tyr Ser Ile
157             500               505               510
159 tct agt aac tat atg att gtt gat ata aat gaa agg cct gca tta gat   1584
160 Ser Ser Asn Tyr Met Ile Val Asp Ile Asn Glu Arg Pro Ala Leu Asp
161             515               520               525
163 aat gag cgt ttg aaa tgg aga atc caa tta tca cca gat act cga gca   1632
164 Asn Glu Arg Leu Lys Trp Arg Ile Gln Leu Ser Pro Asp Thr Arg Ala
165         530               535               540
167 gga tat tta gaa aat gga aag ctt ata tta caa aga aac atc ggt ctg   1680
168 Gly Tyr Leu Glu Asn Gly Lys Leu Ile Leu Gln Arg Asn Ile Gly Leu
169 545               550               555               560
171 gaa ata aag gat gta caa ata att aag caa tcc gaa aaa gaa tat ata   1728
172 Glu Ile Lys Asp Val Gln Ile Ile Lys Gln Ser Glu Lys Glu Tyr Ile
173             565               570               575
175 agg att gat gcg aaa gta gtg cca aag agt aaa ata gat aca aaa att   1776
176 Arg Ile Asp Ala Lys Val Val Pro Lys Ser Lys Ile Asp Thr Lys Ile
177             580               585               590
179 caa gaa gca cag tta aat ata aat cag gaa tgg aat aaa gca tta ggg   1824
180 Gln Glu Ala Gln Leu Asn Ile Asn Gln Glu Trp Asn Lys Ala Leu Gly
181             595               600               605
183 tta cca aaa tat aca aag ctt att aca ttc aac gtg cat aat aga tat   1872
184 Leu Pro Lys Tyr Thr Lys Leu Ile Thr Phe Asn Val His Asn Arg Tyr
185         610               615               620
187 gca tcc aat att gta gaa agt gct tat tta ata ttg aat gaa tgg aaa   1920
188 Ala Ser Asn Ile Val Glu Ser Ala Tyr Leu Ile Leu Asn Glu Trp Lys
189 625               630               635               640
191 aat aat att caa agt gat ctt ata aaa aag gta aca aat tac tta gtt   1968
192 Asn Asn Ile Gln Ser Asp Leu Ile Lys Lys Val Thr Asn Tyr Leu Val
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193                  645                650                  655
195 gat ggt aat gga aga ttt gtt ttt acc gat att act ctc cct aat ata   2016
196 Asp Gly Asn Gly Arg Phe Val Phe Thr Asp Ile Thr Leu Pro Asn Ile
197                  660                665                  670
199 gct gaa caa tat aca cat caa gat gag ata tat gag caa gtt cat tca   2064
200 Ala Glu Gln Tyr Thr His Gln Asp Glu Ile Tyr Glu Gln Val His Ser
201          675                680                685
203 aaa ggg tta tat gtt cca gaa tcc cgt tct ata tta ctc cat gga cct   2112
204 Lys Gly Leu Tyr Val Pro Glu Ser Arg Ser Ile Leu Leu His Gly Pro
205      690                695                700
207 tca aaa ggt gta gaa tta agg aat gat agt gag ggt ttt ata cac gaa   2160
208 Ser Lys Gly Val Glu Leu Arg Asn Asp Ser Glu Gly Phe Ile His Glu
209 705                710                715                  720
211 ttt gga cat gct gtg gat gat tat gct gga tat cta tta gat aag aac   2208
212 Phe Gly His Ala Val Asp Asp Tyr Ala Gly Tyr Leu Leu Asp Lys Asn
213                  725                730                  735
215 caa tct gat tta gtt aca aat tct aaa aaa ttc att gat att ttt aag   2256
216 Gln Ser Asp Leu Val Thr Asn Ser Lys Lys Phe Ile Asp Ile Phe Lys
217                  740                745                  750
219 gaa gaa ggg agt aat tta act tcg tat ggg aga aca aat gaa gcg gaa   2304
220 Glu Glu Gly Ser Asn Leu Thr Ser Tyr Gly Arg Thr Asn Glu Ala Glu
221          755                760                765
223 ttt ttt gca gaa gcc ttt agg tta atg cat tct acg gac cat gct gaa   2352
224 Phe Phe Ala Glu Ala Phe Arg Leu Met His Ser Thr Asp His Ala Glu
225      770                775                780
227 cgt tta aaa gtt caa aaa aat gct ccg aaa act ttc caa ttt att aac   2400
228 Arg Leu Lys Val Gln Lys Asn Ala Pro Lys Thr Phe Gln Phe Ile Asn
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238 <212> TYPE: PRT
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252      50                55                60
254 Gln Glu Glu His Leu Lys Glu Ile Met Lys His Ile Val Lys Ile Glu
255 65                70                75                  80
257 Val Lys Gly Glu Glu Ala Val Lys Lys Glu Ala Ala Glu Lys Leu Leu
258              85                90                95
260 Glu Lys Val Pro Ser Asp Val Leu Glu Met Tyr Lys Ala Ile Gly Gly
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261                 100                    105                    110
263 Lys Ile Tyr Ile Val Asp Gly Asp Ile Thr Lys His Ile Ser Leu Glu
264         115                    120                    125
266 Ala Leu Ser Glu Asp Lys Lys Lys Ile Lys Asp Ile Tyr Gly Lys Asp
267         130                    135                    140
269 Ala Leu Leu His Glu His Tyr Val Tyr Ala Lys Glu Gly Tyr Glu Pro
270 145                    150                    155                    160
272 Val Leu Val Ile Gln Ser Ser Glu Asp Tyr Val Glu Asn Thr Glu Lys
273                 165                    170                    175
275 Ala Leu Asn Val Tyr Tyr Glu Ile Gly Lys Ile Leu Ser Arg Asp Ile
276                 180                    185                    190
278 Leu Ser Lys Ile Asn Gln Pro Tyr Gln Lys Phe Leu Asp Val Leu Asn
279         195                    200                    205
281 Thr Ile Lys Asn Ala Ser Asp Ser Asp Gly Gln Asp Leu Leu Phe Thr
282         210                    215                    220
284 Asn Gln Leu Lys Glu His Pro Thr Asp Phe Ser Val Glu Phe Leu Glu
285 225                    230                    235                    240
287 Gln Asn Ser Asn Glu Val Gln Glu Val Phe Ala Lys Ala Phe Ala Tyr
288                 245                    250                    255
290 Tyr Ile Glu Pro Gln His Arg Asp Val Leu Gln Leu Tyr Ala Pro Glu
291                 260                    265                    270
293 Ala Phe Asn Tyr Met Asp Lys Phe Asn Glu Gln Glu Ile Asn Leu Ser
294                 275                    280                    285
296 Leu Glu Glu Leu Lys Asp Gln Arg Met Leu Ser Arg Tyr Glu Lys Trp
297         290                    295                    300
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300 305                    310                    315                    320
302 Glu Gly Arg Gly Leu Leu Lys Lys Leu Gln Ile Pro Ile Glu Pro Lys
303                 325                    330                    335
305 Lys Asp Asp Ile Ile His Ser Leu Ser Gln Glu Glu Lys Glu Leu Leu
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315 385                    390                    395                    400
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318                 405                    410                    415
320 Gln Pro Tyr Asp Ile Asn Gln Arg Leu Gln Asp Thr Gly Gly Leu Ile
321                 420                    425                    430
323 Asp Ser Pro Ser Ile Asn Leu Asp Val Arg Lys Gln Tyr Lys Arg Asp
324         435                    440                    445
326 Ile Gln Asn Ile Asp Ala Leu Leu His Gln Ser Ile Gly Ser Thr Leu
327         450                    455                    460
329 Tyr Asn Lys Ile Tyr Leu Tyr Glu Asn Met Asn Ile Asn Asn Leu Thr
330 465                    470                    475                    480
332 Ala Thr Leu Gly Ala Asp Leu Val Asp Ser Thr Asp Asn Thr Lys Ile
333                 485                    490                    495
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